DRAFT
(Date of Last Revision: November 4, 2002)

Nebraska Information Technology Commission

Progress Report To The Governor and Legislature

November 15, 2002

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Executive Summary

The Legislature established the Nebraska Information Technology Commission (NITC) in 1998 to provide advice, strategic direction, and accountability on information technology investments in the state. Section 86-518 directs the NITC to submit a progress report to the Governor and Legislature by November 15 of each even-numbered year. This report is offered in fulfillment of that requirement.

To achieve its mandate, the NITC relies on coordination and collaboration to influence a wide range of information technology issues. The NITC has neither operational authority nor enforcement powers for implementing its policy directives. The NITC has adhered to the legislative directive in Section 86-513 to "coordinate the state's investment in information technology in an efficient and expeditious manner. The provisions (of Sections 86-512 to 86-524) are not intended to impede the raid deployment of appropriate technology or establish cumbersome regulations or bureaucracy."

The NITC has focused its efforts on the four goals listed in the Statewide Technology Plan:

1. Support the development of a robust statewide telecommunications infrastructure that is scalable, reliable, and efficient;
2. Support the use of information technology to enhance community and economic development;
3. Promote the use of information technology to improve the efficiency and delivery of governmental and educational services, including Homeland Security;
4. Promote effective planning, management and accountability regarding the state's investments in information technology.

There has been substantial progress in each of these areas.

Regarding the first goal, the NITC is promoting aggregation of bandwidth and sharing networks across governmental and educational entities. In 1999, the NITC co-sponsored the Telecommunications Infrastructure Needs Assessment (TINA) Study. In 2001, after proposals for a statewide networking infrastructure failed to meet the state's requirements, the NITC met with industry representatives to identify problems and options.

In February 2002, the NITC endorsed a pilot project to test some of the concepts of aggregation. The Scottsbluff pilot project succeeded in bringing cost savings to participants and forging an effective coalition between the University and State Government. That coalition is now expanding its membership and has begun work on the initial segments of a "core routing network" that will serve as the backbone for statewide aggregation. In 2002, the NITC also sponsored the Nebraska Network Feasibility Study to examine a wide range of network sharing issues that go beyond aggregation of raw bandwidth. In September, the NITC adopted the findings and

recommendations of that study, which provide strategic direction on major areas that affect network management.

The NITC's second goal concerns the use of information technology to enhance community and economic development. The NITC has developed strategies and resources in the form of the Community Information Technology Toolkit. A companion workbook provides a planning guide and a comprehensive assessment tool. The NITC is now providing financial and technical assistance to eight communities, which will undertake community IT planning efforts. The NITC has co-sponsored several regional conferences and helped organize sessions on community IT development at statewide conferences. The NITC also provides staff support for the Telehealth Subcommittee, which provides a forum for members to share ideas and coordinate their efforts.

The NITC's Community Technology Fund has provided financial assistance to 40 local projects. Grant projects range from a joint library automation system, which saved three libraries thousands of dollars, to a technology business incubator.

The third goal of the NITC is to promote the use of information technology to improve the efficiency and delivery of governmental and educational services, including Homeland Security. Using grants from the State Records Board, The Chief Information Officer and Nebrask@ Online have worked together to revamp and enhance the availability of government information and services over the Internet. The Business Portal (**www.nebraska.gov/business/**) provides convenient access to all business-related services and information, including a searchable database of 1200 business-related forms of state agencies. The CIO and Nebrask@ Online are now collaborating on automating forms, developing interactive license renewal applications, providing an online payment portal, making further enhancements to the business portal, and creating both a citizens portal and an education portal.

The NITC has also co-sponsored the annual conference on e-government and special events pertaining to security and accessibility. The State Government Collaboration Fund has provided financing for several small projects.

Promoting effective planning, management, and accountability for spending on information technology has been the NITC's fourth area of emphasis. The NITC has put in place requirements for agency comprehensive information technology plans and project level plans. The NITC has adopted standards and guidelines in several areas, including accessibility, security policies, and video standards for synchronous distance learning and video conferencing.

In addition to adopting project management guidelines, the NITC has implemented project status reporting for large projects. Pursuant to State Statute, the CIO is monitoring selected projects.

The remainder of this report provides additional details on progress toward each of the NITC's goals. It also discusses the NITC Clearinghouse and includes summary information on several benchmarks for evaluating the state's progress compared to other states and the nation as a whole.

Biennial Legislative Review

The Legislature established the Nebraska Information Technology Commission (NITC) in 1998 to provide advice, strategic direction, and accountability on information technology investments in the state. Section 86-518 directs the NITC to submit a progress report to the Governor and Legislature by November 15 of each even-numbered year. This report is offered in fulfillment of that requirement.

Section 86-524 further directs the Appropriations Committee and Transportation and Telecommunications Committee to conduct a joint review of the activities of the NITC by the end of the calendar year of every even-numbered year. Section 86-524 also provides three objectives and a list of criteria for evaluating progress. This report is intended to provide information to assist the Legislature in conducting its review.

Policy objectives (Section 86-524)
"It shall be the policy of the state to:

1. Use information technology in education, communities, including health care and economic development, and every level of government service to improve economic opportunities and quality of life for all Nebraskans regardless of location or income;
2. Stimulate the demand to encourage and enable long-term infrastructure innovation and improvement; and
3. Organize technology planning in new ways to aggregate demand, reduce costs, and create support networks; encourage collaboration between communities of interest; and encourage competition among technology and service providers."

Review Criteria (Section 86-524):
"In the review, the committees shall determine the extent to which:

1. The vision has been realized and short-term and long-term strategies have been articulated and employed;
2. The statewide technology plan and other activities of the commission have improved coordination and assisted policymakers;
3. An information technology clearinghouse has been established, maintained, and utilized of Nebraska's information technology infrastructure and of activities taking place in the state involving information technology, and the information flow between and among individuals and organizations has been facilitated as a result of the information technology clearinghouse;
4. Policies, standards, guidelines, and architectures have been developed and observed;

5. Recommendations made by the commission to the Governor and Legislature have assisted policy and funding decisions;
6. Input and involvement of all interested parties has been encouraged and facilitated; and
7. Long-term infrastructure innovation, improvement, and coordination has been planned for, facilitated, and achieved with minimal barriers and impediments."

Structure

The NITC consists of nine members, including one member representing elementary and secondary education, one member representing postsecondary education, one member representing communities, one member representing the Governor, and five members representing the general public who have experience in developing strategic plans and making high-level business decisions. The Lt. Governor serves as the Governor's designee and is the chair of the NITC.

Pursuant to Section 86-516 (7) and 86-521, the NITC conducts most of its work through the Community Council, Education Council, State Government Council, and Technical Panel. Each council establishes ad hoc work groups to prepare recommendations on specific topics. Agendas and minutes of the Councils and Technical Panel, including reports on the activities of ad hoc work groups, are available at www.nitc.state.ne.us.

The Office of the Chief Information Officer provides support for the NITC, its Councils, the Technical Panel and ad hoc groups. The Governor appoints the Chief Information Officer, who reports directly to the Lt. Governor.

NITC Vision And Goals

NITC Vision Statement
Promote the use of information technology in education, health care, economic development, and all levels of government services to improve the quality of life of all Nebraskans.

NITC Goals

1. Support the development of a robust statewide telecommunications infrastructure that is scalable, reliable, and efficient;
2. Support the use of information technology to enhance community and economic development;
3. Promote the use of information technology to improve the efficiency and delivery of governmental and educational services, including Homeland Security;
4. Promote effective planning, management and accountability regarding the state's investments in information technology.

Statewide Technology Plan

Section 86-516 requires the NITC to prepare an annual statewide technology plan. The most recent version is located on the NITC web site, www.nitc.state.ne.us. In addition to the vision statement and goals, the statewide technology plan provides specific objectives and action items. Separate sections in the statewide technology plan address the topics of:

- NITC Vision And Goals
- Council Priorities And Action Items
- Technical Infrastructure
- Planning And Project Management
- Effectiveness Measures

The 2002 Statewide Technology Plan serves as a blueprint to guide and evaluate the efforts of the NITC.

Progress Toward Goal 1

Goal: Support the development of a robust statewide telecommunications infrastructure that is scalable, reliable, and efficient.

The NITC is promoting aggregation of bandwidth and sharing networks as the primary strategy for improving telecommunications in Nebraska. Collectively, state and local government, higher education, and K-12 educational entities represent a huge market for voice, video and data communications. By coordinating purchases of telecommunications services and decisions on technical requirements, publicly funded entities have the power to influence the state's telecommunications infrastructure. This covers a full range of issues for participating entities, including lower costs, deployment of new technology, statewide coverage and quality of service.

In 1999 - 2000, the NITC co-sponsored the Telecommunications Infrastructure Needs Assessment (TINA) Study with the Division of Communications (DOC). The TINA Study inventoried current telecommunications demand and projected future needs of government agencies and educational institutions. In 2001, the DOC acted on behalf of the NITC and in collaboration with potential stakeholders to issue a request for proposal (RFP). The NETCOM (Nebraska Telecommunications Network) RFP invited bids to implement advanced broadband technology throughout the state with an extensive distribution of regional and local aggregation points. Had it been successful, the NETCOM RFP would have provided a robust telecommunications infrastructure that was scalable and reliable. It would have permitted easy sharing of networks among public entities, while providing communities and businesses independent access to the same technology. In October 2001, the DOC rejected all five bids as too expensive and not responsive to the RFP requirements. Each vendor proposed to build a costly private network for the exclusive use of the state and any partners it represented.

The NETCOM RFP tried to accomplish more than was feasible, given the circumstances. It would have required major new investments by providers, without an adequate level of business to insure a positive return on investment, because the DOC could only guarantee a level of demand for state agencies. The concept of postalized rates, the extensive distribution of aggregation points, and the requirement for a major network operations center represented additional significant costs and risks to providers.

Looking for an alternate approach, the NITC approved the concept of a pilot project for aggregating bandwidth in February 2002. Subsequently, the DOC and the University of Nebraska combined their video and data traffic from Grand Island to Scottsbluff by sharing a single DS3 line. Qwest is the long haul carrier, while Sprint Local Service distributes the traffic to the "last mile". Benefits of the pilot project include:

- Demonstrating that the University and the State (through DOC) have formed an effective working coalition for aggregating telecommunications services;
- Overall cost savings of 10 to 15%;
- Service improvement to users;
- Some scalability by creating the ability for fractional services (above 56kps) and providing a limited amount of excess capacity for future growth.

Another positive outcome of the Scottsbluff pilot project was formalizing the working relationship between the University and DOC by creating the "Collaborative Aggregation Partnership". The purpose of the partnership is to serve as the operational entity for network design, bandwidth aggregation, and contract management. The Nebraska Educational Telecommunications has been added as a member. Other partners will be included as needed. This partnership is now designing a core routing network that would form the basis for sharing data traffic, with an initial focus oneducational entities. This would be the first phase of an evolving effort to aggregate most publicly funded Internet traffic and provide shared networks.

Another spin-off of the Scottsbluff pilot project has been increased interest in many sectors of the telecommunications industry in responding to the demand for statewide aggregation and more cost-effective services. This interest is reflected both in several meetings with state officials and within the industry.

In February 2002, the NITC also started the Nebraska Network Feasibility Study. TINA, NETCOM, and the Scottsbluff pilot project have focused on aggregating raw bandwidth. In contrast, the purpose of the Nebraska Network Workgroup was to examine the benefits and problems related to sharing the applications that run on networks. The workgroup submitted its final report to the NITC in September 2002. The findings included a listing of the substantial costs, shortcomings, andstrengths of existing regional and statewide single-purpose networks. The recommendations underscored the need for bandwidth aggregation and a statewide core routing network. Other recommendations called for:

- Developing a shared IP-centric network primarily serving educational and other interested entities;
- Preparing a plan to implement a statewide synchronous video network;

- Evaluating other opportunities for sharing applications that would benefit all levels of education;
- Researching options for long-term management and operation for aggregation and sharing networks.

These and other recommendations provide strategic direction to guide future efforts. Copies of the final report and related information are available at: http://www.nitc.state.ne.us/nitc/network/.

Progress Toward Goal 2

Goal: Support the use of information technology to enhance community and economic development.

The Community Council of the NITC has promoted the use of information technology to enhance community and economic development by building partnerships, developing resources on information technology-related development, providing assistance to communities, organizing workshops, and providing grants for community technology projects. The Community Council also sponsors the Telehealth Subcommittee, which provides a forum for discussion and coordination on topics of mutual interest.

Building Partnerships. The NITC has partnered with the University of Nebraska and the Technologies Across Nebraska initiative on a number of projects. By developing strong partnerships, the NITC has been better able to leverage its resources and to coordinate the delivery of information technology development programming.

Developing Toolkit Resources. In partnership with the University of Nebraska and the Technologies Across Nebraska, the NITC has developed a Community Information Technology Toolkit. The toolkit is available at www.nitc.state.ne.us or from technologiesacrossnebraska.unl.edu. The toolkit contains strategies and resources, frequently asked questions (FAQs), reading lists, and contact information related to information technology-related development.

The *Community Information Technology Planning and Assessment Workbook* is the newest addition to the toolkit. The workbook includes a detailed planning guide, a nine-question quiz to determine a community's level of e-readiness, and a comprehensive assessment tool.

Providing Assistance to Communities. This fall, eight communities have begun piloting the *Community Information Technology Planning and Assessment Workbook* and other toolkit materials. The eight communities are:

- Alliance
- Brown/Keya Paha/Rock Counties
- Custer County
- Crawford-Harrison
- Edgar

- Fillmore County
- West Point
- York County

Each community is eligible to receive up to $2,500 to support their planning efforts. Participating communities are receiving support from the NITC, the University of Nebraska Cooperative Extension, and Technologies Across Nebraska partners.

Organizing Conferences and Workshops. Through several conferences and workshops, the NITC has provided education and training on information technology-related development.

On April 12, 2002, a conference on information technology planning and development was held in Aurora, Nebraska. The conference was organized by the NITC, in partnership with the University of Nebraska and Technologies Across Nebraska. Other sponsors included Governor Mike Johanns, the Nebraska Department of Economic Development, the Nebraska Public Service Commission, and the Nebraska Rural Development Commission. Speakers included Lt. Governor Dave Heineman, Al Wenstrand , director of the Nebraska Department of Economic Development; Congressman Tom Osborne; and rural telecommunications advocate Jane Leonard. Approximately 135 individuals from 43 Nebraska communities participated in the conference. Conference evaluations indicated that the conference effectively provided information and training on technology-related development:

- Ninety-six percent of the participants indicated that attending the conference helped them understand the importance of IT-related community and economic development.

- Ninety-one percent of the participants indicated that attending the conference helped them understand how to begin incorporating information technology into local community and economic development processes.

On September 24, 2002, a workshop on preparing applications for the USDA Rural Utilities Service Community Connect broadband grant program was offered. The workshop was organized by the NITC in partnership with the University of Nebraska, Technologies Across Nebraska, and the USDA Rural Utilities Service. The workshop was available at satellite downlink sites across the state and via streaming video from the Technologies Across Nebraska Web site.

In addition, NITC staff has helped to organize sessions on IT development at several statewide conferences including the Nebraska Rural Institute, the League of Nebraska Municipalities Annual Meeting, and the Nebraska Development Network Annual meeting.

Providing Grants for Community Technology Projects. Since September 1998, 40 projects have received a total of $834,200 from the Nebraska Information Technology Commission's Community Technology Fund. The projects funded demonstrate how

information technology is being used to improve efficiency and enhance economic development. Grant projects range from a joint library automation system which saved three libraries thousands of dollars to a technology business incubator. Information on projects funded in 2000 and 2001 is available at http://www.nitc.state.ne.us/cc/grants/2002/CTF0102report.pdf .

In 2002, eleven projects received grants totaling $191,060.06 from the Community Technology Fund:

- **The City of Ashland** will purchase a LaserFiche system to scan all city documents into a format which provides more convenient access to the public. (Award: $7,629)

- **Sarpy County** will develop a county-wide GIS land base map which will enhance the accessibility of information to local government departments, decision-makers, and the public. (Award: $25,000).

- **LaVista Public Library** will offer basic scanning classes to library patrons, community members, and staff of Metropolitan Community College's Sarpy Center and the City of LaVista. (Award: $3,612.06)

- **Cherry County Hospital** will install an interactive video system which will provide access to medical and educational programming and will support the development of telehealth services in Cherry County. (Award: $11,136)

- **Valley County Hospital** will expand access to medical and educational programming in the area by developing an interactive video/distance learning center. (Award: $19,623)

- **Omaha Public Library** will make government more accessible by placing a library kiosk with links to city, county, and state government Web sites as well as career information and library collections. (Award: $25,000)

- **The City of Aurora** will demonstrate that smaller Nebraska communities can economically implement GIS by using the digital databases already compiled by other public and private agencies and organizations. (Award: $25,000)

- **Central Community College** will enhance general education and job skills training by installing computers in 6 learning centers in economically depressed counties. (Award: $18,518)

- **University of Nebraska Cooperative Extension** will assist eight Nebraska communities or regions in the development of technology plans. Participating communities will be eligible for mini grants to support their planning activities. (Award: $20,000)

- **Franklin County Memorial Hospital** will convert medical records into an electronic form, accessible through encrypted Internet services to qualified practitioners at any of the five sites operated by the hospital. (Award: $22,292)

- **The City of South Sioux City** will create wireless access points at ten strategically identified areas in the community. This project will enable the city to provide more efficient services to its citizens. (Award: $13,250)

Progress Toward Goal 3

*Goal: **Promote the use of information technology to improve the efficiency and delivery of governmental and educational services, including Homeland Security.***

In November 2000, the NITC adopted the e-government strategy developed by the State Government Council. The report set forth a vision, goal, and measurable objectives for planning and implementing e-government projects, including access to government information and services by businesses, citizens, and employees. Governor Johanns also endorsed the e-government strategy and called for immediate work on an initiative that focused on the interaction of business with state and local agencies. The Business Portal Action Plan (March 2001) set forth short and long term steps to provide a single point of access, self-service, and integration across agency boundaries and political jurisdictions.

Using a grant from the State Records Board to the CIO, Nebrask@ Online developed the Nebrask@ Online For Business website (www.nebraska.gov/business/). The business portal includes the following key features:

- A searchable inventory of all business-related forms of state agencies, which number more than 1200;
- The ability to download the highest volume forms (1,000+ submissions per year);
- A secure procedure for maintaining a personal database of forms unique to each user ("My Portfolio");
- Convenient access to all business-related services and information;
- Current business related news releases from agencies and development organizations;
- Links to a wide range of business development resources.

Using a second grant from the State Records Board to the CIO, Nebrask@ Online is now working on enhancements to the state's business portal. Phase II of the business portal will implement a method to maintain the accuracy of the forms inventory database. Nebrask@ Online will also conduct training sessions with businesses across the state to promote the business portal and explain how to use it. Phase II also includes funding to automate forms.

Use of Nebrask@ Online for Business has grown steadily since its introduction last spring. Over a four-month period, the number of hits increased from 68,000 in May to

178,000 in August. Usage will continue to grow as more businesses become aware of this service and as the website has more to offer.

Making maximum use of the State Records Board grants, Nebrask@ Online and the CIO are collaborating on three other projects. The Interactive License Renewal Initiative will establish a web site for all license renewal applications and fund up to five interactive license renewal applications. The intent is to use this initiative as a pilot project to develop the most cost-effective approach for fully automating forms of all agencies. Another joint project is developing an online payment portal that all agencies can use for applications that offer payment by credit card, electronic check or similar means. The third initiative will create a citizen's portal that will provide "one-stop shop" for government services at the local, county, and state levels that are of interest to citizens. In addition to increasing the ease of access to existing information and services, this project will identify and implement new features.

Other agencies have undertaken projects, which enhance the goal of e-government. The Secretary of State and Nebrask@ Online are putting all agency rules and regulations online in a searchable format. They are also developing a system to track the progress of proposed changes to rules and regulations. Under the leadership of the Nebraska Crime Commission, state and local criminal justice entities are building one of the best criminal justice information systems in the nation, which shares data across all jurisdictions. The court automation system that is in use in all but one of the state's county and district courts is nationally recognized for its accomplishments. The Supreme Court continues to enhance this system, with plans for Internet access to court records, Internet payment of traffic tickets, and e-filing. The NFOCUS system at the Department of Health and Human Services consistently ranks in the top 10 nationally, because it integrates the eligibility process for 26 different programs and gives caseworkers statewide access to the same information. The Department of Revenue also ranks in the top 10 states, in terms of its use of technology. Over 20% of state tax returns filed this year were filed electronically. Over 10% of Nebraska employers are already using the Department of Labor's new system for electronically filing quarterly Unemployment Insurance Tax and Wage Reports. The Department of Motor Vehicles is installing both an interactive drivers license system and on-line temporary registration system for motor carriers.

In the area of Homeland Security, the CIO and the GIS Steering Committee are developing recommendations regarding the use of geographic information systems to support the needs of the Nebraska Emergency Management Agency. The final report will determine priorities and options for cooperative implementation.

The Education Council has sponsored several recent efforts to improve the efficiency and delivery of educational services, using electronic means. These include:

- Developing an education portal in cooperation with Nebrask@ Online. When completed the education portal will provide a central point of access to a full range of information and services available from educational institutions in Nebraska.

- Developing a policy on course cancellation fees for the NEBSAT system. The course cancellation fees encourage better utilization of distance education resources.
- Facilitating a cooperative purchasing agreement of computers and software through the Midwest Higher Education Consortium.

The State Government Technology Collaboration Fund ….

State agencies have undertaken several major information technology projects that significantly impact daily operations and delivery of information and services. In particular, The Department of Administrative Services is sponsoring the Nebraska Information System, which will automate most financial and human resource functions. The NIS will replace the state government's accounting and payroll systems with an integrated enterprise management system. The Department of Health and Human Services and the State Treasurer recently implemented fundamental changes to the information technology systems that provide the foundation for child support collection, distribution, and enforcement in Nebraska. DHHS is also making major changes to its Medicaid Management Information System and other automated systems to comply with federal requirements governing health information. The Nebraska Public Employees Retirement System is automating many of its procedures. These are just a few examples of agencies using information technology to improve the efficiency and delivery of governmental services.

Conferences are another method for promoting the use of information technology within state government. The NITC has co-sponsored and helped organize the following events:

- Annual E-Government Conferences (1999, 2000, 2001, and 2002);
- Accessibility Conference(Date?)
- Security Awareness Day (July 15, 2002).

Progress Toward Goal 4

Goal: Promote effective planning, management and accountability regarding the state's investments in information technology.

The Information Technology Infrastructure Act underscores the Legislature's interest in effective planning, management and accountability for information technology investments. Section 86-516 (5) directs the NITC to adopt guidelines regarding project planning, management, and technical reviews. Section 86-516 (8) requires the NITC to "… make recommendations to the Governor and Legislature, including a prioritized list of projects, reviewed by the technical panel, for which new or additional funding is requested." Section 86-520 (5) requires the Chief Information Officer to "implement a strategic, tactical, and project planning process for non-education state government information technology that is linked to the budget process." Section 86-520 (9) requires the Chief Information Officer to "monitor the status of major non-education state government technology projects." Section 86-521 requires the Technical Panel to "review

any technology project or request for additional funding recommended to the Nebraska Information Technology Commission." Section 86-516 (6) directs the NITC to "adopt minimum technical standards, guidelines, and architectures upon recommendation by the Technical Panel."

In addition, Sections 86-525 through 86-530 establishes the Information Technology Infrastructure Fund and assigns additional responsibilities to the NITC and CIO. These duties include approving project plans and monitoring the status of projects.

To meet these statutory directives the NITC and CIO have implemented the following procedures and activities:

- Agency Comprehensive Information Technology Plans;
- Information technology project proposal requirements;
- NITC prioritization of budget requests for new or additional funding for information technology;
- Technical Panel project reviews;
- Technical standards and guidelines;
- Project Management Guidelines and Project Status Reporting Requirements;
- Monitoring of selected large-scale enterprise projects.

Agency Comprehensive Information Technology Plans. Prior to developing their biennial budget requests, state agencies must submit comprehensive information technology plans to the NITC. The plans document existing applications, databases, computer systems and networks. They also indicate the degree to which agencies are implementing NITC standards and guidelines. A section in the plans summarizes future strategies and projects. Copies of agency comprehensive information technology plans and summary information based on the plans are available at: http://www.nitc.state.ne.us/itc/sg.htm.

Information Technology Project Proposal Requirements. The project proposal form is intended to project sufficient information about a project to determine its scope, merits, technical impact, risks, and budget. The form is used for biennial budget requests for information technology projects and NITC grant requests. A copy of the form is available at: http://www.nitc.state.ne.us/forms/.

Budget Reviews and Prioritization . The review and prioritization process used in 2000 and 2002 was thorough, structured, and produced an integrated and numeric ranking of budget requests for information technology. Both the Budget Division and Legislative Fiscal Office use the NITC reviews and priorities as a point of departure for their own analyses.

Technical Panel Project Reviews. By statute, the Technical Panel is required to review and provide technical analysis for a number of information technology related projects and requests. The panel has reviewed 51(??) budget requests for information technology projects totaling more than $16.5 (??) million; 126 Community Technology Fund grant requests; and 21 Government Technology Collaboration Fund grant requests. The panel has also provided technical reviews of projects receiving state funds from the

Information Technology Infrastructure Fund. These projects include the NETCOM telecommunications project; the Public Safety Wireless System project; the Crime Commission's NCJIS project; and the NIS project.

Technical project reviews were also conducted for 11 grant requests from the State Records Board; requests from the Education Innovation Fund competitive grants; and the Department of Education's School Renovation Technology Grants. The Technical Panel has heard special presentations on other existing and proposed projects asking for voluntary technical reviews.

Technical Standards and Guidelines. Since its inception, the Technical Panel and the NITC have worked steadily on developing technical standards and guidelines. The purpose of these standards and guidelines is to establish policy, improve compatibility of systems, and increase efficiency. Since the NITC has no regulatory authority, implementation of standards and guidelines depends on voluntary compliance based on shared values or self-interest. All standards and guidelines go through an extensive public process of development and adoption. They are posted on the NITC website at: http://www.nitc.state.ne.us/standards/index.html. The NITC has adopted the following standards and guidelines:

- Accessibility -- technology access clause for state contracts; Accessibility Policy; Accessibility Checklists;
- E-mail standards for state agencies;
- Hardware -- Workstation guidelines (minimum configurations) for state agencies and K-12 educational entities;
- Security – Security Policies (Information Security Management; Access Control; Disaster Recovery; Education, Training and Awareness; Individual Use; Network Security; Security Breaches and Incident Reporting); security planning resource documents (Security Officer Instruction Guide; IS Technical Staff Handbook; Computer Users' Security Handbook); and incident reporting procedures;
- Video -- Video and audio compression standards for synchronous distance learning and video conferencing;

Work is in progress on disaster planning guidelines, training for accessibility issues, a secure e-mail solution for state agencies, technical requirements for the network architecture, and an implementation plan for integrating synchronous video networks.

Project Management Guidelines and Project Status Reporting Requirements. The Statewide Technology Plan endorsed the Project Management Institute's Project Management Body of Knowledge (PMBOK). The first implementation was a requirement for selected projects to submit quarterly project status reports, using a standard format. Seven agencies reported on a total of 25 projects during the last reporting period. Copies of the project status reports are available on a password-protected web site: http://www.nitc.state.ne.us/itpm/.

Project Monitoring. Section 86-516(6) directs the Chief Information Officer to "monitor the status of major non-educational state government technology projects." The quarterly project status reports represent one method for meeting this responsibility. In addition, the CIO chairs the CHARTS / SDU Integration Steering Committee and the

HHSS HIPAA Steering Committee. The CIO also managed the contract for the federally mandated IVV (Independent Verification and Validation) review of the CHARTS project. The CIO is a member of the NIS Steering Committee and participates in a management-level oversight group.

NITC Clearinghouse

The information technology Infrastructure Act makes four references to an information technology clearinghouse. Section 86-508 defines an information technology clearinghouse as a "service to provide convenient access for the commission and general public to information about best technology practices, referrals for technical assistance, and other information related to the Information Technology Infrastructure Act. Section 86-513 establishes legislative intent that, "A clearinghouse should be formed for technical support and best practices information." Section 86-516 directs the NITC to "Create an information technology clearinghouse to identify and share best practices and new developments, as well as identify existing problems and deficiencies." Finally, Section 86-524 directs the Appropriations Committee and Transportation and Telecommunications Committee to evaluate progress on whether "An information technology clearinghouse has been established, maintained, and utilized of Nebraska's information technology infrastructure and of activities taking place in the state involving information technology, and the information flow between and among individuals and organizations has been facilitated as a result of the information technology clearinghouse."

The NITC has used the Internet as the most economical means for providing an information technology clearinghouse. The NITC's web site (www.nitc.state.ne.us) is organized as a clearinghouse. It provides access to an extensive amount of information including resources for communities, educational entities, and state government. There is also a section for citizens, which will be greatly expanded as part of the citizen portal project of Nebrask@ Online. The section on community resources includes topics such as "Best practices and resources for community leadership and IT planning," and "funding strategies." The NITC website is the official repository for agenda, minutes, and documents for the NITC, its councils and their workgroups. The section on "Technical Architecture" provides access to all technical standards and guidelines adopted by the NITC or under development.

In addition to the clearinghouse, the NITC publishes a monthly electronic newsletter, *NITC.news*, which provides current information on information technology issues and developments. The current readership is 900. It includes public officials, community leaders, educational personnel, and interested persons. Past copies of *NITC.news* are available on the NITC website.

Effectiveness Measures

Overview

The overall purpose of the NITC is to set strategic direction in the area of information technology. This requires knowledge of where we are as well as where we want to be. Section 1 (Goals) sets forth a vision with supporting objectives and priorities. This section presents various ways to track the state's strength in its deployment and use of information technology. The scorecard includes various measures for communities, education, and government.

The NITC must also track its own effectiveness. This is accomplished in part through the choice of NITC objectives, Council priorities, and action plans that have measurable outcomes. To track progress, the Office of the CIO prepares status reports on NITC-sponsored activities. These reports will be available on the NITC web site at: www.nitc.state.ne.us.

Community Information Technology Effectiveness Measures

Community Indicators

There are few sources, which regularly document the use of information technology by communities or households by state. The U.S. Department of Commerce periodically publishes reports examining Internet access based on data collected by the U.S. Census Bureau. In the last two reports published by the Department of Commerce, Nebraska was slightly below the national average in the percentage of households with Internet access. The most recent report, *A Nation Online: How Americans Are Expanding Their Use of the Internet*, is available at http://www.ntia.doc.gov/ntiahome/dn/index.html .

Percent of Households with Internet Access

	2000[1]	**2001**[2]
Nebraska	37.0%	45.5%
National Average	41.5%	50.5%

Economic Indicators

There are several studies, which have examined economic indicators of states and metropolitan areas. A recent study by the Federal Reserve Bank of Kansas City found that, when the

[1] *Falling Through the Net*. National Telecommunications and Infrastructure Administration. August 2000
[2] *A Nation Online: How Americans are Expanding Their Use of the Internet*. National Telecommunications and Infrastructure Administration. February 2001

geographic dispersion of the region's population is taken into account, the states comprising the Tenth District (Wyoming, Colorado, New Mexico, Nebraska, Missouri, Kansas, and Oklahoma) are quite high tech. In comparison to other metropolitan areas of similar sizes, both Lincoln and Omaha rank above the national average in both percent of workers in high-tech occupations and in the percent of workers in high-tech industries.

Metropolitan Area	% of workers in high-tech occupations, 2000	% of workers in high-tech industries, 1999
Omaha	6.7	5.1
Lincoln	6.6	2.7

Source: Federal Reserve Bank of Kansas City, Economic Review, Second Quarter 2002 (www.kcfrb.org)

The State New Economy Index is an often-cited study of the ability of states to compete in the new economy. Nebraska fares well on some measures, including information technology jobs, education level of the manufacturing workforce, export focus of manufacturing, digital government, online agriculture, broadband telecommunications, and high-tech jobs. The 2002 State New Economy Index for Nebraska follows.

The 2002 State New Economy Index

http://www.neweconomyindex.org/states/2002/index.html

A. Nebraska

Indicator	Rank	Score
Overall*	**33**	54.35
Aggregated Knowledge Jobs	**26**	9.91
Information Technology Jobs *Employment in IT occupations in non-IT industries as a share of total jobs.*	**21**	1.6%
Managerial, Professional & Tech Jobs *Managers, professionals, and technicians as a share of the total workforce.*	**27**	25.3%
Workforce Education *A weighted measure of the educational attainment (advanced degrees, bachelor's degrees, associate degrees, or some college course work) of the workforce.*	**34**	46.6
Education Level of the Manufacturing Workforce *A weighted measure of the educational attainment of the manufacturing workforce.*	**5**	1.56
Aggregated Globalization Score	**40**	8.71
Export Focus Of Manufacturing *Manufacturing export sales per manufacturing worker.*	**23**	$33,079
Foreign Direct Investment *The percentage of each state's workforce employed by foreign companies.*	**45**	2.8%
Aggregated Economic Dynamism Scores	**41**	7.80
"Gazelle" Jobs *Jobs in gazelle companies (companies with annual sales revenue that has*	**32**	12.8%

grown 20 percent or more for four straight years) as a share of total employment.		
Job Churning *The number of new start-ups and business failures, combined, as a share of all establishments in each state.*	**45**	16.9%
Initial Public Offerings *A weighted measure of the value and number of initial public stock offerings of companies as a share of gross state product.*	**28**	4.31
Aggregated Digital Economy Scores	**18**	10.98
Online Population *The percentage of adults with Internet access in each state.*	**28**	55.4%
Commercial Internet Domain Names *The number of commercial Internet domain names (".com") per firm.*	**42**	0.41
Technology in Schools *A weighted measure of five factors measuring computer and internet use in schools.*	**1**	3.82
Digital Government *A measure of the utilization of digital technologies in state governments.*	**22**	3.18
Online Agriculture *A measure of the percentage of farmers with Internet access and who use computers for business.*	**22**	3.10
Online Manufacturers *The percentage of manufacturing establishments with Internet access.*	**31**	84.6%
Broadband Telecommunications *A measure of the use and deployment of broadband telecommunications infrastructure over telephone lines.*	**12**	3.62
Aggregated Innovation Capacity	**34**	7.66
High-Tech Jobs *Jobs in electronics manufacturing, software and computer-related services, telecommunications, and biomedical as a share of total employment.*	**19**	4.9%
Scientists and Engineers *Civilian scientists and engineers as a percentage of the workforce.*	**40**	0.33%
Patents *The number of patents issued to companies or individuals per 1,000 workers.*	**41**	0.34
Industry Investment in R&D *Industry investment in research and development as a percentage of Gross State Product (GSP).*	**42**	0.42%
Venture Capital *Venture capital invested as a percentage of GSP.*	**35**	0.16%

* Because of differences in methodology, changes in ranks between 1999 and 2002 cannot all be attributed to changes in actual economic conditions in the state.

Education Information Technology Effectiveness Measures

Education Technology Statistics

Although Nebraska's ratio of the number of students per computer has improved in almost every case, other states have made faster headway by providing even more computers using increased funding. With the decreased allotments from the Education Innovation Fund and the Technology Challenge Literacy Fund for new technology, Nebraska's ranking may continue to decline. Nebraska's Internet access has improved relative to the rest of the country by deploying more T-1 to public schools over the past two years.

Category	Year	National Average	Nebraska Average	Rank
Students Per Instructional Computer	1999	5.7	3.9	2
	2001	4.9	3.7	5
	2002	4.2	3.1	6
Students Per Instructional Multimedia Computer	1999	9.8	7.1	3
	2001	7.9	7.1	5
	2002	6.9	6.0	16
Students Per Internet-connected Computer	1999	13.6	7.2	3
	2001	7.9	5.1	5
	2002	6.8	4.6	3
Of those schools with Internet Access, the % that connect using T-1, cable modem, or faster	1999	56%	49%	30
	2001	67%	77%	7
	2002	72%	69%	29

Government Information Technology Effectiveness Measures

Digital State Survey

For three years, the Center for Digital Government, The Progress & Freedom Foundation, and Government Technology Magazine have conducted a detailed survey of digital government in all 50 states. Nebraska's overall score in 1999/2000 was 14. Nebraska scored relatively well in five categories. In 2001, the Digital State Survey made important changes in content and verification procedures. Detailed rankings are provided only for states that rank in the upper half. Nebraska's standing was 17th overall, with a top-ten ranking in three categories. In 2002, Nebraska's ranking dropped in four categories and increased in three. A comparison of Nebraska's ranking for the past three years is below:

Digital State Survey Results			
Category	2000 Ranking	2001 Ranking	2002 Ranking
Electronic Commerce / Business Regulation	28	25	Unranked (>25th)
Taxation / Revenue	29	9 (tie)	1 (tied)
Law Enforcement / Courts	12	Unranked (> 25th)	Unranked (> 25th)
Social Services	9	5 (tie)	7 (tie)
Digital Democracy	13	3	17
Management / Admin.	10	22	Unranked (>25th)
Education	K-12: 31st; Higher Ed: 17th	20	14 (tied)
GIS / Transportation	(New category in 2001)	Unranked (> 25th)	21 (tied)
Aggregate Ranking	14th	17th	Unranked (>25th)

The rankings in specific categories reflect the type of questions asked. For example, in 2000, Nebraska ranked 10th in Management/Administration, because it boasted a CIO, a technology commission, and had completed a statewide technology plan. In 2001, the questions focused on whether the CIO had broad authority, whether the technology commission made decisions on projects, and whether a detailed technical architecture was in place. Nebraska's ranking dropped in subsequent years, because we are pursuing a collaborative approach to coordination rather than top-down centralization of all decision-making authority. And, we are still in the early phases of the complex task of defining a technical architecture.

In addition to the survey results above, Nebrask@ Online was a 2001 and 2002 finalist (top 10 designation among states) in the "Best of the Web" competition. The 2001 Digital State Survey also recognized the Department of Health and Human Services' NFOCUS program as a best practice. NFOCUS is unique among states, because it integrates multiple aid programs and provides access to a wide range of private entities that are involved in client intake and services. It is a fully automated eligibility determination and case management system that integrates twenty-five separate benefits programs.

The University of Nebraska achieved "Best of Breed" status with its Virtually Integrated University. The University of Nebraska System has developed, in partnership with supplier Blackboard Corporation, the cornerstone of its computing architecture: the Virtually Integrated University. This new model applies a portal strategy to create an environment that links somewhat independent administrative systems, such as SAP, student information systems, and the data warehouse. It also gives students and faculty the ability through technology to have all University information on one web site.

The Supreme Court's automated court system (JUSTICE), which is in use in all but one of the state's county and district courts, received "Best of Breed" honors in the Digital State Survey in 2002. JUSTICE provides complete functionality for court administration and case management. It also shares data with many other systems in state and local government.

Copies of the Digital State Survey reports are available at: http://www.centerdigitalgov.com/. The "best of breed" reports are available on the NITC web site at: www.nitc.state.ne.us/news/0201. A copy of this report with a detailed analysis by category is available at: http://www.nitc.state.ne.us/news/0201/SG_nebraska_scorecard.pdf.

Its score in six categories kept Nebraska from ranking in the top 10 for 2002. These include digital democracy, electronic commerce / business regulation, law enforcement / courts, education, and GIS / transportation. Key steps to improve in these categories are summarized below. Part C gives more detailed information about the results, criteria, and best practices for all eight categories.

Digital Democracy. Digital democracy refers to the application of digital technologies to permit Internet access to laws, candidate information and electronic voting technologies. Regaining a top ranking is this category would require the following functionality: Allow citizens to subscribe to bills and receive e-mail update on legislation; improve availability of election information on the Web, and better online access to campaign and lobbyist disclosures.

Current Strategy: Citizen Portal Initiative.

Electronic Commerce / Business Regulation. Moving business-related forms to the Internet for submitting online with electronic payment is key to success. Other areas for improvement include online vehicle registration renewals, using technology to streamline procurement and purchasing, and pursuing intergovernmental projects and practices.

Current Strategy: Governor's Business Portal Initiative; individual agency enhancements.

Law Enforcement / Courts. Key success criteria include digital mobile technologies and a digital communications network for officers. Other criteria for improvement include video conferencing services at all state prisons and providing online access to all court decisions and opinion. Using digital signatures for the justice system and accepting pleadings, motions, and brief filings online are also areas for improvement.

Current Strategy: JUSTICE (court automation system) enhancements; Criminal Justice Information System (CJIS) Strategic Plan; individual agency enhancements.

Management / Administration. A major reason for our low ranking in this category is the lack of a technical architecture. Other criteria for improvement include implementing content management, providing live 24x7customer support for the state's portal, and providing the CIO with enterprise wide authority over information technology management and funding. Another benchmark (Governing Magazine's Government Performance Project 2001) also downgraded Nebraska's approach to information technology management for similar reasons. That survey indicated the need to accelerate development of the technical architecture, improve evaluation of proposed systems, and establish evaluation of existing systems after implementation.

Current Strategy: Nebraska Information Technology Commission (NITC) planning and project management requirements; project review process; technical architecture standards and guidelines.

Education. Doing better in this component would require an integrated approach to distance education programs to coordinate course offerings and schedules and minimizing redundant offerings and implementing a statewide plan for IT professional development in K-12 education.

Current Strategy: Education Portal Initiative; NITC Education Council priorities; individual agency enhancements.

GIS / Transportation. A higher ranking is this category would require developing a GIS clearinghouse to which all departments have access, and standardized protocols exist for making updates to departmental "layers" of mapped data. Other changes would include a fully integrated online GIS repository that is available online to the general public and integrating the state's intelligent transportation system plans into other IT strategic plans.

Current Strategy: GIS Steering Committee Strategic Plan; Department of Roads (DOR) GIS Strategic Plan; DOR Intelligent Transportation System.

Governing Magazine Performance Evaluation

Every two years, Governing Magazine sponsors the Government Performance Project covering five areas of management including financial management, capital management, human resources, managing for results, and information technology. Nebraska scored an average grade of B in 1999 and B- in 2001. Nebraska's grade for information technology management was a C+ in both 1999 and 2001, but dropped significantly relative to other states. In 1999, Governing Magazine ranked 27 states with a grade of C or below. In 2001, only 12 states received a grade of C or below. Nebraska did well in the areas of having a statewide technology plan, sharing data among agencies and across jurisdictions, implementing digital government, and using information technology to support agency functions and programs. Areas for improvement included:

- More centralized authority over information technology decisions (the Governing survey implies a preference for centralized decisions);
- Formal evaluation of proposed hardware and software systems;
- Formal evaluation of information technology systems after implementation;
- A structured process for project management, tracking, and reporting;
- Adopting a comprehensive technical architecture, standards, and guidelines;
- Implementing training.

Security Assessments

In October 2000, KPMG conducted a limited security audit of the state's network. They identified several vulnerabilities stemming from missing or weak security policies and poorly configured servers. Long-term recommendations called for:

- Developing and enforcing security policies and procedures;
- Creating minimum baseline documents for each platform;
- Reviewing and testing device configurations on a regular basis.

The NITC has funded a grant for an external intrusion vulnerability assessment of the state's data network. The Office of the Chief Information Officer will solicit bids in fall of 2002. The assessment will include a vulnerability scan that is designed to mimic how an external party with little or no "inside" information would approach breaching State security measures. Based on the results of the initial phase, selected areas of potential vulnerabilities will be studied in further depth and exploited as far as is reasonable without causing significant disruption of services.

CHARTS Independent Verification and Validation

As part of a federal requirement, the consulting firm of TRW has performed semi-annual reviews of the CHARTS project. Their findings included recommendations for statewide standards in several areas:

- Management standards for large scale and high risk projects;
- Quality Assurance (QA) standards, metrics and tools;
- System development and Configuration Management (CM) process for all state projects.